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ABSTRACT:

5 An optical signal processor comprises a first input  
terminal for a pulse signal light with a signal wavelength,  
a second input terminal for a probe light with a probe  
wavelength different from the signal wavelength, a first  
10 splitter to split the probe light into two portions, an XPM  
optical device, to which one portion of the split output  
lights from the first splitter and the pulse signal light  
enter, to modulate the one portion of the split output  
lights from the splitter according to amplitude variation of  
the pulse signal light, a second splitter to split the light  
15 with the probe wavelength phase-modulated by the XPM optical  
device into two portions, a first combiner to combine the  
other portion of the split output lights from the first  
splitter with the one portion of the split output lights  
from the second splitter in in-phase relation during a  
20 period corresponding to a non-pulse period of the pulse  
signal light, and a second combiner to combine the other  
portion of the split output lights from the second splitter  
with the output light from the first combiner in in-phase  
25 relation during a period corresponding to a pulse period of  
the pulse signal light.

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